Notes from the 01/31/06 MI BPM Upgrade Meeting
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These notes can be found in Beams docDB #1526.

Agenda as announced:

Project Announcements
Combiner Board status
Transition Board
Transition Board I/O
Timing Board
Front-end software
Online software
Validation
AOB

0. Project Announcements

- Steve showed a few slides giving some general ideas about the work ahead on the MI BPM project from now until the shutdown, during the shutdown, the installation and commissioning of the final system, and project closeout. The slides can be found in beams-doc-1526.

- The above generated discussion about the installation strategy for the system. Though it is a bit early to make any firm decisions about what we are doing in May or June (we don't have all the hardware yet and we still have much to do during the few weeks that we have beam) it does make sense to plan to talk to MI department leadership to explore the possibilities. One is to install the complete system during the shutdown and come up with only the new MI BPM electronics. Another is to do some sort of partial install. A third is to install some parts of the system but to connect it later, after beam has been established. Or install nothing until after the beam is established in May-June and install the systems house-by-house or building by building. Further discussions will occur as we move forward.

- Bob had some comments on the MI40 installation. Bob suggested that the VME crate be fully loaded with Echotek boards that will finally be required for all 3 houses and that the house 44 channels be plugged into the final Echotek channels. There was much discussion about changes that were required to implement this and a tentative decision to move forward as soon as possible.

- Bob also discussed system offsets. First the sign needed to be consistent and it is assumed that we can get that right in the end. There are electrical offsets, installation offsets and electronic

offsets that either need to be implemented (or not) either in the front-end or the applications. This will need some more thinking but some preliminary information can be collected by Marv from various files and databases and implemented.

- Finally Bob talked a bit about system timing issues. This is a follow-on to Friday's discussion as well as a continuing issue as we further understand MI40.

1. Combiner Board

- 30 more boards were installed last week. There are something like 40 more to install. Some are in "hot" areas of the tunnel and some care will have to be taken when installing those.

- There was some discussion of a "bad BPM" that needs to be investigated. It may have a bad cable from the pickups to the combiner box or there may be some other problem. Dave Capista would like to have it investigated as soon as possible to understand whether a quad needs to be replaced during the shutdown.

2. Transition Board: Manfred

- The design was frozen last week and finalized. There were a few schematics changes needed to fix some cut-and-paste type mistakes. The final version will be placed in docdb as a pdf file.

- Most parts will be here soon. The last ship date is Feb 14. The filters should be on the way.

- 72 boards will be ordered. 3 boards are already built (the prototypes). 56 boards are needed for the entire system.

- The crimp tool needs to go back to DESY so it needs to be located.

- The 6U frames are being assembled. We still need to acquire the backplanes.

- The RFP for the transition boards should go out soon. We decided that a first article should be delivered and checked before the full order is assembled.

3. Transition Board I/O

- Stefano gave a summary of current status and it can be found as a file in docDB 1526.

- There was a discussion of whether to continue only with the prototype design for the I/O card or whether to also or alternatively proceed with an improved design. I think the conclusion is that we should pursue the improved design (modulo some discussion within CEPA about effort availability) with the prototype design as a fallback.

4. Timing Board

- No major issues. There was one problem with the transition card that sits on the back of the timing card in the MI40 installation. That was fixed and we moved on.

5. Front-end software

- Much of the functionality required at MI40 has been implemented and works.

- Still need to work on raw mode, safe mode, and understanding what offsets to include.

- The software specification document is still being finalized.

6. Online software

- Various applications were relinked to allow the new data to be used. Some more work is going on to allow I39 to be "state aware".

- Ming-Jen Yang is working on one of the TBT applications.

7. Some comments on the new system - Dave Capista

- Dave mentioned that the new system doesn't provide data the way he expected. Some more communication about the expectations of the system will help to solve this problem (flash mode, display frames).

- Dave showed some TBT plots that looked reasonable. There is some issue about what to do with data when the sum signal is below threshold since the position data in that case is not terribly useful.

- Things that we still need to do before the shutdown are smoothing, offsets, display frame, bumps to check signs and magnitudes. At the moment the house 44 BPMs are effectively masked off from operations and so we have some flexibility to make changes. However, we should pursue getting them into operations sometime before the shutdown to gain some real world experience.

8. Validation

- Rob is writing up the notes from last Friday's timing discussion.

- Rob is also starting to look at some of the new data.

9. AOB

- More timing discussions. Manfred pointed out that the transition board adds approximately 70 ns to the signal propagation time.